STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
Office of Conservation and Coastal Lands
Honolulu, Hawaii

July 11, 2008

Board of Land and
Natural Resources
State of Hawaii
Honolulu, Hawaii

REGARDING: MEMORANDUM OF AGREEMENT between the Department of Land and Natural Resources, Office of Conservation and Coastal Lands, and the University of Hawaii, School of Ocean, Earth Science and Technology, Coastal Geology Group for a Coastal Lands Data Program

APPLICANT: Department of Land and Natural Resources, Office of Conservation and Coastal Lands and the University of Hawaii School of Ocean, Earth Science and Technology, Coastal Geology Group

BACKGROUND/PROPOSED ACTION:

The purpose of this Memorandum of Agreement (MOA) is to establish a formal relationship with the University of Hawaii, School of Ocean, Earth Science and Technology, Coastal Geology Group (Coastal Geology Group) to provide for the development, management and dissemination of coastal data and research products for the Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL) to help carry-out its efforts to protect and conserve beaches and dunes for the benefit of present and future generations. The MOA is attached herein as **Exhibit 1.**

Beaches and coastal areas are part of Hawaii's culture and heritage. They provide enjoyment, ocean access, and spiritual fulfillment to Hawaii's people. Beaches are the backbone of Hawaii's multi-billion dollar visitor economy that provides the majority of the state's jobs and income. Beaches and adjoining sand dunes are critical for flood and erosion prevention serving as a natural buffer to prevent or reduce property damage from storm waves and surge, tsunami, sea-level rise, and seasonal high surf. Beaches and dunes are important elements of our shoreline environment and are critical to the health of coastal marine ecosystems. Unfortunately, sandy beaches in Hawaii have been lost at an alarming rate due to natural processes as well as poor management practices including; the construction of shoreline armoring, sand mining, the destruction of coastal sand dunes, the inferred

impacts of sea level rise, and imprudent siting of structures in close proximity to eroding shores.

As beaches narrow and disappear due to sea-level rise, human impacts, and other causes of sediment deficiency, shoreline properties become increasingly vulnerable to numerous coastal hazards. Scientific data on sea-level change indicates global sea level is rising and the rate of rise is accelerating and is expected to increase this century. This will contribute to accelerated coastal erosion, and increasingly expose coastal communities to marine inundation during storms, tsunamis, high swell, and even high tides. Government needs to continue to assess the impact of coastal erosion on beach management, coastal communities and public infrastructure in low-lying areas.

The OCCL is in charge of the Coastal Lands Program (CLP) within DLNR. The Coastal Geology Group and the Coastal Lands Program jointly developed the Coastal Erosion Management Plan (COEMAP), which was adopted by the Board of Land and Natural Resources (BLNR) in 2000 as the State's policy to manage coastal erosion and conserve beaches statewide. COEMAP was also endorsed by other state, federal and county agencies. The OCCL and the Coastal Geology Group have been involved in numerous other publications and projects to provide non-regulatory and regulatory tools to protect beaches and coastal communities from erosion damage. There is frequent communication between the two groups in the form of requests from the OCCL for data, technical analyses, and interpretations of shoreline processes. The OCCL has found that having a source of scientific expertise and related data and derivative products has enhanced the state's ability to manage the shoreline and protect beaches and accompanying ecosystems.

The OCCL lacks the technical resources to produce and maintain high-level coastal data. The Coastal Lands Data Program can act as an extension of the OCCL to promote sustainable coastal development and beach conservation practices via the provision of data and scientific observations and interpretations that improve our understanding of shoreline change trends, beach processes, human impacts, coastal sediment characteristics, and the latest findings and implications of global warming (e.g., changes in storminess, sea level rise, ocean acidification, and others), and the potential impacts of sea level rise on coastal communities and infrastructure. This program would also enhance current DLNR/UH Sea Grant College Program partnerships in place that provide a technical resource to the DLNR on coastal hazards and coastal land use related subjects.

The Coastal Geology Group has devoted much of its effort to the field of applied coastal science and has provided direct assistance, in the form of research products and data, to regulatory agencies such as OCCL, the Army Corps of Engineers, and the respective county governments to improve beach and coastal erosion management. A list of some of these products is provided below for reference:

1. Coastal Erosion Management Plan for the State of Hawaii (COEMAP)
2. Coastal hazard risk maps and shoreline erosion maps;
3. Sandy substrate analysis to support the Kuhio Beach sand pumping project;
4. Training in global change impacts and shoreline processes;

5. Communication of advances from technical journals and other research groups outside Hawaii;
6. Digital map products useful for shoreline planning such as LIDAR data, undistorted aerial photographs, historical aerial photographs, computer simulations of coastal processes, and composite map products using TMK's, erosion rate data, and other useful GIS layers;
7. Written reports;
8. *Ad hoc* recommendations in problem-solving situations as part of serving on technical committees;
9. Providing an expert and independent presence at various meetings, and interagency discussions;
10. Maintaining a public website, and a parallel password protected website for agency use, that serves erosion data, maps, historical photos, and derivative products.

This MOA will ensure a consistent and continuous stream of relevant scientific data and research products to OCCL, which will improve OCCL's ability to implement the Coastal Lands Program, manage beach restoration projects, evaluate erosion management alternatives, and protect beaches from inappropriate development. The Coastal Lands Program's efforts will be significantly enhanced and expanded by continued support from the UH Coastal Geology Group and establishment of a **Coastal Lands Data Program.**

Under the proposed MOA, the parties will do the following:

A. The OCCL will:

1. Provide funds to the Coastal Geology Group in an amount to be determined on an annual basis, based on available OCCL funds. Funding shall not be in excess of $100,000 annually and shall be determined based on specific project needs and scope.

B. The Coastal Geology Group will:

1. Provide information and research products to the OCCL in conformity with the provisions of this Agreement.
2. Create, manage and disseminate coastal erosion rate data.
3. Create data streams, web products, and mapping products useful for beach management.
4. Provide a link between OCCL and the scientific and engineering coastal community at large.
5. Provide expertise in various project-specific problem-solving situations.
6. Respond quickly in situations needing scientific expertise such as rapid mapping, advice, and analysis.
7. Provide training and technology transfer as requested.
8. Make available enhanced computer capability, modeling skill, and field monitoring expertise

that is not available in OCCL.

9. Provide technical support to study the impact of sea-level rise on coastal communities, beaches and dunes, littoral ecosystems, and infrastructure.
10. Provide a team of researchers in support of technician activities in the area(s) of coastal modeling, statistics, beach processes, and other relevant areas
11. Provide a team of graduate students and undergraduate students assisting in the research enterprise
12. Provide a link to the full expertise of faculty in the university community to collaborate on projects and problem solving in keeping with OCCL objectives.
13. Invoice the OCCL on an annual basis for on-line access and overhead costs.
14. Provide support to the OCCL for the development of a beach management/restoration plan.
15. Provide annual reports of products and services provided, and a work plan for the coming year to be provided prior to the transfer of funds. The work plan for the coming year shall include a budget to be agreed upon by the Coastal Geology Group and OCCL. This annual statement of work and the budget will be a collaborative product of the OCCL and UH and reflect the needs of the OCCL.
16. The OCCL may require the Coastal Geology Group to return any funds for products and services not provided in accordance with the work plan for the coming year.

The MOA has been reviewed and approved by the Department of the Attorney General.

RECOMMENDATION:

Based on the preceding analysis, staff recommends that the Board of Land and Natural Resources (Board) APPROVE this MOA between DLNR and UH.

Respectfully submitted,

Samuel Lemmo, Administrator
Office of Conservation and Coastal Lands

Approved for submittal:

Laura H. Thielen, Chairperson
Board of Land and Natural Resources

MEMORANDUM OF AGREEMENT
Between the
Department of Land and Natural Resources
Office of Conservation and Coastal Lands
and the
University of Hawaii, School of Ocean, Earth
Science and Technology, Coastal Geology Group

THIS MEMORANDUM OF AGREEMENT entered into this ___ day of _____,2008 (hereinafter referred to as "Agreement"), by and between the Department of Land and Natural Resources (hereinafter "DLNR") and the University of Hawaii, School of Ocean, Earth Science and Technology, Coastal Geology Group (hereinafter (Coastal Geology Group) agree to the following .

WHEREAS, the DLNR and the Coastal Geology Group enter into the Agreement for the creation of a Coastal Lands Data Program; and

WHEREAS, the DLNR is responsible for the protection of the State's Conservation District including beaches and coastal dunes;

WHEREAS, there is considerable interest in the conservation and preservation of important coastal lands including high value recreational beach areas;

WHEREAS, it is clear that additional special protection and management strategies are needed to ensure the protection of these areas;

WHEREAS, effective coastal management and conservation practices require additional research and data products in order to carry out these objectives;

WHEREAS, the DLNR, under the Office of Conservation and Coastal Lands is involved with the protection and preservation of coastal lands statewide and additional financial and technical expertise are required to assist with this effort;

WHEREAS, the Coastal Geology Group is currently providing data and technical support services to the DLNR and several counties and federal agencies in the areas of shoreline erosion, beach restoration, and dune management;

WHEREAS, the DLNR, and the Coastal Geology Group, may combine their respective resources to create a special program entitled the Coastal Lands Data Program in order to better utilize existing technical support from the Coastal Geology Group as well as other local experts;

WHEREAS, the DLNR, and UH agree to providing these services as funding allows;

NOW THEREFORE, in consideration of the promises contained in this Agreement, the DLNR, and the Coastal Geology Group agree as follows:

I. PARTIES AND PURPOSE

This Agreement is between the Department of Land and Natural Resources Office of Conservation and Coastal Lands and the University of Hawaii, School of Ocean, Earth Science and Technology, Coastal Geology Group.

The purpose of this Agreement is to establish a formal relationship with the University of Hawaii, School of Ocean, Earth Science and Technology, Coastal Geology Group (Coastal Geology Group) to provide for the development, management and dissemination of coastal data and research products for the Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL) to help carry-out its efforts to protect and conserve beaches and dunes for the benefit of present and future generations.

II. BACKGROUND

Beaches and coastal areas are part of Hawaii's culture and heritage. They provide enjoyment, ocean access, and spiritual fulfillment to Hawaii's people. Beaches are the backbone of Hawaii's multi-billion dollar visitor economy that provides the majority of the state's jobs and income. Beaches and adjoining sand dunes are critical for flood and erosion prevention serving as a natural buffer to prevent or reduce property damage from storm waves and surge, tsunami, sea-level rise, and seasonal high surf. Beaches and dunes are important elements of our shoreline environment and are critical to the health of coastal marine ecosystems. Unfortunately, sandy beaches in Hawaii have been lost at an alarming rate due to natural processes as well as poor management practices including; the construction of shoreline armoring, sand mining, the destruction of coastal sand dunes, the inferred impacts of sea level rise, and imprudent siting of structures in close proximity to eroding shores.

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Management Plan (COEMAP), which was adopted by the Board of Land and Natural Resources (BLNR) in 2000 as the State's policy to manage coastal erosion and conserve beaches statewide. COEMAP was also endorsed by other state, federal and county agencies. The OCCL and the Coastal Geology Group have been involved in numerous other publications and projects to provide non-regulatory and regulatory tools to protect beaches and coastal communities from erosion damage. There is frequent communication between the two groups in the form of requests from the OCCL for data, technical analyses, and interpretations of shoreline processes. The OCCL has found that having a source of scientific expertise and related data and derivative products has enhanced the state's ability to manage the shoreline and protect beaches and accompanying ecosystems.

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7. Written reports;
8. *Ad hoc* recommendations in problem-solving situations as part of serving on technical committees;
9. Providing an expert and independent presence at various meetings, and interagency discussions;

10. Maintaining a public website, and a parallel password protected website for agency use, that serves erosion data, maps, historical photos, and derivative products.

This Agreement will ensure a consistent and continuous stream of relevant scientific data and research products to OCCL, which will improve OCCL's ability to implement the Coastal Lands Program, manage beach restoration projects, evaluate erosion management alternatives, and protect beaches from inappropriate development. The Coastal Lands Program's efforts will be significantly enhanced and expanded by continued support from the UH Coastal Geology Group and establishment of a **Coastal Lands Data Program**.

III. TERMS AND CONDITIONS

The Department of Land and Natural Resources, Office of Conservation and Coastal Lands (OCCL), and the University of Hawaii, School of Ocean, Earth Science and Technology, Coastal Geology Group (Coastal Geology Group), now referred to as the Parties, hereby agree, to the greatest extent possible and in accordance with their respective budgets, laws, and missions with the following terms and conditions:

A. The OCCL will:

1. Provide funds to the Coastal Geology Group in an amount to be determined on an annual basis, based on available OCCL funds. Funding shall not be in excess of $100,000 annually and shall be determined based on specific project needs and scope.

B. The Coastal Geology Group will:

1. Provide information and research products to the OCCL in conformity with the provisions of this Agreement.
2. Create, manage and disseminate coastal erosion rate data.
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4. Provide a link between OCCL and the scientific and engineering coastal community at large.
5. Provide expertise in various project-specific problem-solving situations.
6. Respond quickly in situations needing scientific expertise such as rapid mapping, advice, and analysis.
7. Provide training and technology transfer as requested.
8. Make available enhanced computer capability, modeling skill, and field monitoring expertise that is not available in OCCL.
9. Provide technical support to study the impact of sea-level rise on coastal communities, beaches and dunes, littoral ecosystems, and infrastructure.
10. Provide a team of researchers in support of technician activities in the area(s) of coastal modeling, statistics, beach processes, and other relevant areas

11. Provide a team of graduate students and undergraduate students assisting in the research enterprise
12. Provide a link to the full expertise of faculty in the university community to collaborate on projects and problem solving in keeping with OCCL objectives.
13. Invoice the OCCL on an annual basis for on-line access and overhead costs.
14. Provide support to the OCCL for the development of a beach management/restoration plan.
15. Provide annual reports of products and services provided, and a work plan for the coming year to be provided prior to the transfer of funds. The work plan for the coming year shall include a budget to be agreed upon by the Coastal Geology Group and OCCL. This annual statement of work and the budget will be a collaborative product of the OCCL and UH and reflect the needs of the OCCL.
16. The OCCL may require the Coastal Geology Group to return any funds for products and services not provided in accordance with the work plan for the coming year.

IV. DURATION OF AGREEMENT, AMENDMENTS, OR TERMINATION

A. This Agreement will become effective on the date of the final signature of the parties and will remain in effect for five years from that date.

B. The Parties will review the Agreement every year to determine whether it should be renewed, revised, or terminated.

C. This Agreement may be amended within its scope or renewed prior to the expiration date, through written mutual consent of the Parties.

D. This Agreement may be terminated by: (1) written mutual consent; or (2) one Party's written notice six months in advance.

V. OTHER PROVISIONS

A. The Parties recognize that the provision of any service under the Agreement is subject to available funds.

C. The Parties realize that provisions on the part of the Coastal Geology Group are dependent upon external grants and other funding sources in support of the intention of this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the day and year first above written.

Signatories

University of Hawaii, School of Ocean, Earth Science and Technology

By:_____ **Date:**_____

Brian Taylor, Dean
School of Ocean and Earth Science and Technology

By:_____ **Date:**_____

Charles Fletcher, Professor
School of Ocean and Earth Science and Technology

Approved as to Form

By_____ **Date:**_____

Deputy Attorney General

Department of Land and Natural Resources

By_____ **Date:**_____

Laura H. Thielen, Chairperson
Board of Land and Natural Resource